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The Effects of Self Focused Attention on the MMPI Validity Scales

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by

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VITA

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INTRODUCTION AND STATEMENT OF THE PROBLEM

Questionnaires, attitude scales and personality inventories have long been popular methods of data collection in clinical and social psychology. While these instruments have varied in construction, content and purpose, their basic format is generally the same: they ask subjects to describe themselves by endorsing statements which reflect their attitudes, feelings and behavior. The validity of self report measures, as these tests have collectively been called, is therefore dependent on the accuracy of a subject's self description. At first glance, this may appear to be an issue of little practical significance. The assumption here is that the responder is in the best possible position to describe his own experience and report it accurately. However, closer examination of this issue leads one to question this assumption. Self report measure validation research has repeatedly shown that subjects' verbal descriptions of themselves are frequently not consistant with their actual behavior.

Many investigators have proposed that the inconsistancy found between self report and behavior is attributable to the responders' test taking attitudes. A variety of test taking attitudes have been identified and have been referred to collectively as "response sets" or "response styles". For present purposes, a response set may be defined as the consistent

tendency to select test responses with some common property other than the one related to the substantive variable the test is intended to measure (Fiske, 1971). One frequently noted response set has been referred to as "acquiescence" or the tendency to answer "True" or "Yes" to an agree-disagree item regardless of content. The response set considered by many to pose the most serious threat to the validity of self report measures has been called "faking".

As the label suggests quite readily, faking refers to a responder's tendency to dissimulate when completing a self report measure; it is his tendency to distort, falsify or otherwise present a picture of himself that is inconsistant with how he actually feels, thinks and behaves. While all faking involves distortion of the truth, the extent and nature of this distortion may vary. One responder may consciously falsify his self description in order to present an overtly favorable or unfavorable picture of himself. Such would be the case where an ambitious job applicant attempts to impress a prospective employer by falsifying an occupational interest scale; or, where a draft dodger attempts to appear maladjusted on a personality inventory in order to avoid conscription. Another responder may dissimulate in a less deliberate and extreme fashion. Rather than consciously lying, he presents a mildly self serving picture of his personality; he gives himself the benefit of the doubt or

ignores some of his weaknesses and faults. This form of faking may have less to do with the responder's conscious attempts to deceive another than it does with unconscious attempts to "deceive" himself. Or, it may represent, as some suggest, the responder's natural tendency to present a "socially desirable" picture of himself, one that is consistant with the culture's generally accepted standards of behavior.

Since the problem of faking was first noted attempts have been made to take distortion in self description into account when interpreting self report data. In general, there have been two approaches to this problem: the "clinical approach" and the "psychometric approach". The clinical approach relies on the test interpreter's intuitive skill to identify a faked record. As with other aspects of assessment, the success of this approach depends largely on the acumen of the individual clinician. The psychometric approach relies not so much on the test interpreter, as on the test itself to take distortion into account. Proponents of this approach have attempted to construct and incorporate directly into the body of tests "validity scales" which not only identify, but systematically correct for the influence of distortion. Additionally, they have attempted to make faking more difficult by including in tests only questions whose purpose is not easily discernible and whose response alternatives are equally socially desirable.

While they differ in the ways they take distortion into account, both the clinical and psychometric approaches share the assumption that the responder's tendency to distort his self description is, more or less, fixed and unchangeable. This assumption has led most researchers to investigate more efficient methods of monitoring, or impeding the faker. Less work has been directed at developing strategies that would reduce a test taker's tendency to fake, or increase his tendency to tell the truth. Recent research by Pryor, Gibbons and Wicklund (1975) and Pfau (1976) suggests, however, that such strategies can be developed — that a subject's tendency to fake may be reduced by manipulating simple environmental stimuli. Their work, based on Duval and Wicklund's (1972) theory of "objective self awareness", shows that when test takers are stimulated to focus attention on themselves, they become more objective and produce self reports more consistant with their actual behavior. In short, these results suggest that self report measure validity is enhanced by conditions which foster self focused attention.

The present study will examine the effects of self focused attention on the degree of frankness and honesty with which college aged subjects complete a widely used self report personality inventory, the Minnesota Multiphasic Personality Inventory. The MMPI is a convenient

instrument for present purposes because it contains validity scales which measure the extent to which a subject fakes good or bad. Self focused attention will be promoted in one of the experimental groups by seating subjects before a large mirror while they complete the MMPI. Self focused attention will be promoted in a second experimental group by seating subjects before a description of their physical characteristics. A control group will complete the test under normal conditions. The major hypothesis is that subjects who are stimulated to focus attention on themselves will answer the MMPI in a more frank and honest manner than subjects who are not so stimulated. It is assumed that these effects will be reflected in the subjects' validity scale scores.

REVIEW OF THE RELATED LITERATURE

Evidence of a Self Report - Behavior Discrepancy

Attitude versus Behavior. Social psychologists and sociologists interested in the attitude-behavior relationship have known for some time now that what people say about themselves on questionnaires is not always consistent with how they actually behave. In his classic study, La Piere (1934) demonstrated that restaurant and hotel managers' actual ethnic restriction practices differed greatly from their statements of restriction policy. La Piere accompanied a Chinese couple on a trip across the country and observed their attempts to gain food and lodging at a variety of establishments. Of the 251 establishments visited, only one refused to accomodate the couple. Six months later, La Piere sent questionnaires to the managers of these same establishments asking among other questions, "Will you accept members of the Chinese race as guests in your establishment?". Surprisingly, only one manager answered this question affirmatively. Noting the striking difference between attitude and behavior, La Piere concluded: "Only a verbal reaction to an entirely symbolic situation can be secured by the questionnaire. It may indicate what the responder would actually do when confronted with the situation symbolized in the question but there is no assurance that it will".

Since 1934 a number of studies examining attitudes and behavior toward specific ethnic groups have confirmed La Piere's findings (Kutner, Williams and Yarrow, 1952; Lohman and Reitzes, 1952; and Minard, 1952). Further research has shown the attitude-behavior inconsistency not to be restricted to the area of ethnic prejudice. Freeman and Ataov (1960) found no relationship between college students' attitudes toward cheating on examinations and their actual cheating behavior. Henry (1959) showed that teachers' descriptions of their classroom behavior were frequently unrelated to their actual teaching practices. Hassinger and McNamara (1957) found that people's statements about health practices often bore no relationship to their actual health practices. Similar discrepancies between self report and behavior have been noted by investigators examining the relationship between attitudes toward alcohol and drinking behavior (Warriner, 1958); attitudes toward handicapped people and hiring of the handicapped (Schletzer, 1961) and attitudes toward child rearing and actual child rearing practices (Zunich, 1962). Wicker (1969) reviewed thirty-four studies that examined the relationship between attitudinal measures (questionnaires) and direct behavioral referent measures. Evaluating the results, he reported:

> Taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be related to actions. Product moment correlation coefficients relating these two kinds of responses are rarely above .30 and often near zero. Only rarely can as much as 10% of the variance in overt behavioral measures be accounted for by attitudinal data. In studies in which data are dichotomized, substantial proportions of subjects show attitude-behavior discrepancies. This is true even when subjects scoring at the extremes of attitudinal measures are compared on behavioral indices. (Wicker, 1969, p. 75)

Self Description of Personality versus Behavior.

Many writers in the field of clinical psychology (Allport, 1937, 1942; Bernreuter, 1940; Kelly, Miles and Terman, 1936; Rosensweig, 1934, 1938; and Strong, 1943) have also cautioned that a person's account of himself on a personality questionnaire may not be consistent with his actual behavior. In fact, several studies have demonstrated a direct discrepancy between questionnaire and behavioral measures of personality.

In their review of psychological test validation research, Campbell and Fiske (1959) pointed out that self report measures of personality traits often fail to show convergent validity, discriminant validity or both. Applying the multi-trait multi-method matrix to Borgatta's (1954) data, they found that the correlation between self ratings and peer ratings of "Popularity" and "Expansiveness" were .19 and .08 respectively. For these same traits the correlations between self ratings and behavioral measures

(observation of group interaction and role playing) did not exceed .26. Becker (1960) employed the multi-trait multi-method matrix to refute Sheier and Cattell's (1958) claim that questionnaire and behavioral measures of the same personality traits are strongly related. Correlations of .106 and -.245 were found between questionnaire and behavioral measures of two of the four traits examined. Correlations between the measures were higher for the other two traits, but in these cases adequate discriminant validity could not be demonstrated.

Katkin (1965) found that subjects' scores on the Taylor Manifest Anxiety Scale, a self report measure of anxiety, were not related to physiological measures of anxiety such as galvanic skin response, heart rate and respiration. Similar results were reported by Martin (1961), Raphelson (1957) and Rosenstein (1960). Of course, the lack of relationship between questionnaire and physiological measures of anxiety must be viewed in light of the fact the physiological measures themselves frequently do not correlate significantly (Lacey, 1967).

Cooke (1966) found that behavioral measures of fear and self report measures of fear such as the Fear Survey Schedule and the Bendig Emotionality Scale did not correlate significantly. Most of the correlations between self report and behavioral measures in Cooke's study were below .10. Liebowitz (1968) examined the relationship between a self

report measure of aggression, the Buss-Durkee Hostility Inventory (BD) and a behavioral measure of aggression, the Buss Aggression Machine (BAM). The BAM is of a free response device which allows a subject to believe that he is actually inflicting pain on another human being. The level of pain inflicted is graduated with the subject choosing which level to administer. Liebowitz found that the correlations between performance on the BAM and scores on the subscales of the BD ranged from .02 to .30. The correlation between BAM performance and total BD score was only .23. None of these correlations were significant. As Mischel (1968) points out: "The phrase 'personality coefficient' might be coined to describe the correlation between .20 and .30 which is found persistently when virtually any personality dimension inferred from a questionnaire is related to almost any conceivable external criterion involving responses sampled in a different medium -- that is not by another questionnaire. Generally, such correlations are too low to have value for most individual assessment purposes beyond gross screening decisions. Moreover, the obtained network of relationships often are too diffuse to be comprehensible theoretically."

Explanations of the Self Report-Behavior Discrepancy

Several explanations have been offered to account for the discrepancy often found between self report and behavior. Tededeshi and Lindskold (1976) suggest that verbal and

motor (actual) behavior are often subject to different reinforcement contingencies. One may be positively reinforced for making the statement "I like to go to parties", but punished for actually going. This discrepancy in reinforcement histories, they feel, leads to the subsequent discrepancy found in responses. Several authors (Allen, 1958; Cattell, 1957; Nunnelly, 1959; and Vernon, 1964) have suggested that it may be a subject's self ignorance -- his lack of awareness of how he actually feels or behaves -- that accounts for the discrepancy between his self report and his behavior. According to this view, subjects simply do not have sufficient information to answer the questions posed by self report measures. Their subsequent guessing introduces random error to questionnaire variance and, thus, lowers the instrument's validity.

Response Sets. Of the many explanations offered to account for the discrepancy between self report and behavior the most influential and controversial one has revolved around the concept of response sets or response styles. A response set refers to a test taker's consistent tendency to endorse responses with some common property other than the one related to the substantive variable the test is supposed to measure (Fiske, 1971). Put another way, response sets refer to response consistencies irrespective of intended stimulus differences (Mischel, 1968).

One of the response sets that has received quite a bit of attention in the literature has been called "acquiescence". Acquiescence refers to the subject's tendency to respond "True" or "Yes" more often than "False" or "No" on true-false yes-no items where he is in doubt. In a series of studies, Cronbach (1941, 1942, 1946) offered several lines of evidence to document the existence of acquiescence. After analyzing the scores of students on ten academic true-false tests, Cronbach found that: 1) the majority of students had an excess of "true" responses; 2) when students guessed on an item, they were likely to respond "true"; 3) the split half reliability coefficients of the items keyed false were almost always higher than that of the items keyed true and often higher than that of the entire test; 4) the correlations between scores achieved on the true keyed items and the false keyed items were invariably low; and 5) individual differences in the tendency to respond true when in doubt were relatively stable. Cronbach reasoned that the tendency to acquiesce reduced the validity of the true keyed items and thus of the test itself.

Numerous investigators (Bass, 1955; Chapman and Bock, 1958; Chapman and Campbell, 1957; Christie, Havel and Seidenberg, 1958; Cohn, 1953; Jackson, Messick and Solley, 1957; Leavitt, Hax and Roche, 1955; Messick and Jackson, 1957, 1958; and Zuckerman, Norton and Sprague, 1958) have

demonstrated that acquiescence influences "authoritarianism" scores achieved on the California F Scale. Each of these investigators compared scores on the original form of the test with scores on specially constructed alternate forms. The original form consisted of only true keyed items. The various alternative forms were rewritten so that the content of the questions remained the same, but the keying became reversed. In all of the studies significant asymmetries were found between scores on the two forms.

Damarian and Messick (1965) reviewed fourteen factor analytic studies of response style influence in self report variance. They found that relatively pure acquiescence factors emerged in ten of the fourteen studies. In each of the four remaining studies two slightly different acquiescence factors appeared. Bass (1955) and Messick and Jackson (1958, 1961) claim that in personality inventories with agree-disagree formats such as the MMPI, the California F Scale or the California Psychological Inventory, much of the principle variance may be accounted for by acquiescence rather than specific item content.

In contrast to the above findings, several studies have found no substantial evidence for the existence of an acquiescent response set. Lichtenstein and Bryan (1965) found mean correlations of .74 to .79 between standard subscales and specially constructed reversed keyed subscales

of the MMPI. These correlations generally approximated the test-retest reliabilities of the standard subscales. Similar results were reported by Rorer and Goldberg (1965a, 1965b). Block (1965) compared the factor structure of a standard and balanced form of the MMPI. On the balanced form some of the true keyed items were deleted so that only scales with equal numbers of true and false keyed items remained. In this way the possible effects of acquiescence were controlled on the balanced form. Contrary to the earlier reported findings of Jackson and Messick (1961), Block found no differences between the factor structures of the two forms.

Perhaps even more than acquiescence the response set that has received most attention in the literature has been referred to as "faking". In a general sense, faking refers to a test taker's tendency to deviate from complete honesty and frankness when describing himself on a questionnaire. Specifically, it may refer to several quantitatively and qualitatively different response styles. For example, a responder may fake "good" or "bad", intentionally or unintentionally. Thus, faking may be as blatant as the malingerer's attempt to look sick on a psychiatric personality inventory, or as innocuous as the normal person's tendency to give himself the "benefit of the doubt" when making self appraisals. While very little work has been done examining the actual rate of occurrence of faking on self report mea-

sures, much research has shown that these measures can indeed be faked.

Weman (1952) had subjects complete measures of "self confidence" under two role playing conditions. In the first condition they were asked to fill out the test as if they had been unemployed for some time and were applying for a job with a large firm. In the second condition they were instructed to fill out the test as if they were applying for a job in a small town library. The results showed self confidence scores to be much higher in the "big firm" condition. Longstaff (1948) showed that when asked to do so, students could fake either interest or aversion to several of the occupations surveyed by the Strong Vocational Interest Blank and the Kuder Personal Preference Inventory. Dunnette, McCartney, Carlson and Kirchner (1962) had sales position applicants complete the Adjective Checklist under directions to answer honestly and directions to "fake good". Significant differences were found between the two groups of scores for personality dimensions such as Sales Effectiveness, Cooperativeness and Conscientiousness. Additionally, the investigators found that validity coefficients were greatly reduced when faked scores were correlated with behavioral measures of sales effectiveness.

Research on questionnaire fakeability has not been limited to the area of personnel selection. In an early study of personality inventory fakeability, Ruch (1942)

showed that college students could distort their responses to the Bernreuter Personality Inventory in such a way as to achieve "extroversion" scores falling in the 98th percentile. This was in contrast to the 50th percentile scores achieved when the test was completed truthfully. Kelly, Miles and Terman (1936) demonstrated that the Terman-Miles Masculinity-Femininity Test could be faked in either direction. Ellis (1946) reviewed forty-two studies which examined either actual or simulated faking on personality questionnaires. Thirty-six of these studies found that subjects were capable of faking or actually did fake their test records. More recently, Meridith (1968) had subjects complete the 16 Personality Factor Test under standard instructions, instructions to produce a good impression and instructions to produce a bad impression. Highly significant differences ($p < .001$) were found between the standard instruction condition and both experimental conditions for thirteen personality dimensions.

The overriding tendency of most people to "fake good" on personality questionnaires has received particular attention in the literature. Edwards (1953, 1957) contends that when completing self report measures, people tend to endorse responses which are "socially desirable" whether the content of these responses applies to them or not. He offers several lines of evidence to support this claim. In his first

study Edwards (1953) had judges rate a group of personality questionnaire items on a nine point scale of social desirability. Ratings ranged from "highly socially desirable" to "highly socially undesirable". The items were then administered to a group of subjects. The correlation between the mean social desirability rating for each item and the proportion of subjects endorsing that item was computed and found to be .87. Subsequent studies using a variety of test items reported similar results (Cowen and Tongas, 1959; Edwards, 1959; Hanley, 1956; Kenny, 1956; Taylor, 1959). It has also been found that scales constructed specifically to measure a person's tendency to endorse socially desirable responses correlate highly with measures of various personality traits. Edwards (1957) constructed such a scale by obtaining judges' ratings of 150 MMPI items. He then selected 39 items that showed perfect interjudge reliability and high discrimination power for inclusion in the Social Desirability Scale (SD). Correlations between SD scores and scores on various other MMPI scales were found to be quite high. For example, SD scores correlated -.84 with scores on the Taylor Manifest Anxiety Scale, -.90 with scores on Drake's Social Introversion Scale, -.73 with scores on Navian's Dependency Scale, and -.75 with scores on Cook's Hostility Scale. Merrill and Heathers (1956) computed the correlations between SD scores and scores on

the ten clinical scales of the MMPI. SD was found to correlate -.52 with Hypochondriasis, -.85 with Psychasthenia, -.77 with Schizophrenia, -.61 with Depression and -.50 with Psychopathic Deviate. In light of the above findings, Merrill and Heathers concluded that much of the variance in personality scale scores is accounted for by the subjects' tendency to endorse socially desirable responses and not by the psychological traits the scales were supposed to measure. Edwards and Diers (1962) offered factor analytic data to support this position. Their results showed that the first order factor loadings of the MMPI scales were linearly related to the correlations between the scales and the Social Desirability Scale. In fact, the lowest correlation found between the factor loadings and the SD X Scale score r's was .96. Additionally, it was found that the first order factor loadings of the MMPI scales could be predicted from the proportion of items in the scale keyed for socially desirable responses. Jackson and Messick (1962) also present factor analytic data that shows a pervasive social desirability factor in the MMPI. Edwards (1967) concluded from the above data: "...scores on various personality trait scales are correlated with scores on the SD scale to the degree to which they are measuring the same common personality trait I believe the SD scale to be measuring: the tendency to give socially desirable responses in self description."

Attempts to Control the Influence of Response Sets

Numerous attempts have been made to reduce the influence that response sets have on self report measures. These attempts can be divided into attempts to prevent the influence of response sets and attempts to correct for the influence of response sets. Preventive measures have included attempts to increase item subtlety, thereby making them more difficult to fake (Fordyce and Rozynko, 1957; Weiner, 1948), attempts to construct response choices of equal social desirability, thus controlling for the SD factor (Edwards, 1957) and attempts to balance the true-false keying of items, thereby making them less prone to the influences of acquiescence (Messick and Jackson, 1958). Each of these methods has been shown to have some degree of success in preventing response set influence, though none of them seems to be totally effective (Fiske, 1971).

Rather than attempting to prevent the influence of response sets, Rosensweig (1934) called for the development of procedures that would monitor and correct for response style bias. "Might it not be more effective to recognize at the outset that such tests (self reports) have certain limitations that can never be completely circumvented and then go on to the measurement of these limiting factors themselves, thus obtaining information by which a correction may be applied to the subject's answers."

Attempts to measure and correct for response set bias have varied in their degree of psychometric sophistication. Psychodynamically oriented writers have suggested relying on the test interpreter's clinical judgement, both for identification and correction of test score variance attributable to response sets. Combs, Soper and Cowen (1963) and Parker (1966), for example, argue that personality inventories should be interpreted as reflections of a person's "public self" concept rather than as an accurate description of typical behavior. The success of these intuitive procedures may vary with the skill of the individual clinician and are, therefore, not always reliable.

More notable than simple intuitive methods have been attempts to construct scales that quantify response set influence. Scores obtained on these scales have been used to correct or suppress the bias attributable to response sets and have thus been referred to as "suppressor variables". A suppressor variable may be defined as a variable which is significantly correlated with trait scale scores but not correlated with the criterion for which the trait scale score is valid (Dicken, 1963). The validity of trait scores can thus be improved by subtracting that portion of score variance which is not associated with the criterion. Several methods have been employed for developing suppressor variables. Cady (1923) constructed his Consistancy Scale by

using a repeated item format and measuring the number of times subjects contradicted themselves. These contradictions or inconsistancies were assumed to be mediated by the subject's attempts to fake. Consistancy Scale scores once obtained were then subtracted from the subject's Adjustment score on the Woodworth Psychoneurotic Inventory. Hartshorne and May (1928) developed their Lie Scale by compiling a list of ideal personality traits, traits so ideal that almost no honest person could claim to possess them. For example, the scale consisted of items such as "I never put off till tomorrow what I ought to do today". The number of ideal traits a subject endorsed was assumed to be an index of the degree to which he faked good on the rest of his record. Humm and Wadsworth (1935), employing their Temperament Scale, used the number of abnormalities subjects disclaimed as an index of faking good. Ruch (1942) constructed an "Honesty" scale for the Bernreuter Personality Inventory consisting of those items which showed shifts in response when answered under standard and fake ideal instructions.

The MMPI Validity Scales. Perhaps the most well known of all the validity scales that have been developed have been the four constructed for use in the Minnesota Multiphasic Personality Inventory. Three of these, the Cannot Say (?) Scale, the L-Scale and the F-Scale were incorporated in the original form of the test by Hathaway and McKinley

(1943). The fourth, the K-Scale, was added later by Meehl and Hathaway (1946). The Cannot Say (?) Scale score is simply the total number of items the responder does not answer, omits, or double marks. The authors regard the Cannot Say Scale as a gross measure of evasiveness, defensiveness or confusion but they do not attribute to it formal psychometric properties. The extent to which Cannot Say scores affect profile validity is seen as an all or none proposition. Scores below 30 have been shown not to affect the validity of the clinical scales and are designated "OK". Scores above 30 have been shown to have a negative effect on clinical scale validity and are thus considered to invalidate the entire profile. It should be noted that the modal score for Cannot Say as determined by Tamkin and Scherer (1957) was zero even among psychiatric patients.

The L-Scale fashioned after Hartshorne and May's (1928) Lie Scale was designed to detect intentional efforts to evade answering the test honestly. It consists of fifteen items that present personality characteristics which are highly socially desirable but rarely possessed by any individual. Normal subjects were found to obtain L scores between 3 and 5 with only 2-3% obtaining scores of 10 or above. Clear evidence exists that as L scores increase the number of clinical scales with T-scores above 70 decreases (Hathaway and Meehl, 1951). However, while the L-Scale has

been shown to effectively detect the naive, deliberate faker, it is relatively insensitive to the more sophisticated modes of faking good such as endorsement of plausible socially desirable traits (Meehl and Hathaway, 1946).

The F-Scale, alternatively labeled the "frequency" or "infrequency" scale, consists of sixty-four items which were found to be rarely answered in the keyed direction. Thus, the F-Scale was designed to detect highly unusual or atypical response patterns. Average raw F scores were found to range between 2 and 4 with only 3 percent of normal subjects scoring above 12. Elevated F scores have been associated with a number of factors which tend to decrease the validity of a subject's test record: errors in recording of answers, reading difficulties, perceptual difficulties and disorientation. (Dahlstrom, Welsch and Dahlstrom, 1972). Additionally, elevated F scores have often been associated with "faked bad" records. Meehl and Hathaway (1946) found that 96 percent of a group of simulated faked bad MMPI profiles had F scores above 15. Marks and Seeman (1963) pointed out that elevated F scores were often obtained by genuinely disturbed respondents who exaggerated the degree of their disturbance as a "cry for help". As might be expected, Hathaway and Meehl (1951) demonstrated that as F scores increase, the number of MMPI clinical scales above a T-score of 70 also increases.

The three validity scales discussed above were designed to detect more or less gross forms of test distortion. Clinical experience with the MMPI showed, however, that subtle forms of defensiveness or faking good could significantly alter a test profile and go undetected by the Cannot Say, L and F scales. Also, while these scales provided an index of test distortion as yet no formula had been developed to systematically correct for the influence this distortion had on the rest of the test record. The K-Scale or "correction scale" was constructed in an attempt to remedy this problem. Meehl and Hathaway (1946) began construction by compiling the test records of fifty known patients who had normal MMPI profiles. These "false negative" profiles were then compared with a group of "true negative" records, that is, normal profiles obtained by normal subjects. Item analysis led to the identification of twenty-two items which differentiated the two groups. Subsequent research with the L_6 scale, as these twenty-two items came to be called, showed that the scale was bipolar: high scores indicated that the respondent was faking good; low scores indicated that he was faking bad. A problem arose, however, in that severe depressives and schizophrenics, "true positives", also obtained low L_6 scores. To reduce the likelihood that these true positive records would be interpreted as mere exaggerations of psychopathology, eight additional items that differentiated schizophrenics and depres-

sives from the general population were added to the L_6. The resultant thirty item scale was labeled K.

Originally, Meehl and Hathaway proposed that the K-Scale be used like the other three validity scales. That is, they proposed that K be used as an indicator of response style distortion, the clinician using his judgement to assess the degree to which this distortion affected the rest of the test profile. Later, however, they developed a psychometric formula for employing the K-Scale as a correction score or suppressor variable. To do this, two groups of "borderline" MMPI profiles were compiled, one group obtained by normals, one group obtained by patients. A borderline profile, as the name suggests, was a test record which did not fit definitively in either the normal or abnormal category. Operationally, these were profiles with at least one clinical scale above a T-score of 65, but with no scale above a T-score of 80. Meehl and Hathaway then determined which weights of K, when added to the clinical scales, significantly differentiated the clinical and normal groups. Their results indicated that this differentiation took place when the total raw K score was added to the Psychasthenia and Schizophrenia scales and when .5K, .4K and .2K was added to the Hypochondriasis, Psychopathic Deviate and Hypomania scales, respectively.

Validation research on the K-Scale has yielded contradictory findings. As mentioned earlier, Meehl and Hathaway

(1946) found that K could be used to differentiate the borderline profiles of normals and patients. In a separate experiment, these authors obtained a group of forty-four profiles, half from normals and half from patients, and attempted to sort them using K scores alone. Any profile with a K-Scale T-score above 50 was classified abnormal; profiles with K-Scale T-scores below 50 were classified normal. Using this procedure, 85 percent of the profiles were sorted correctly. Hathaway and Meehl (1951) and Hathaway and Monachesi (1961) found that K scores were negatively correlated with the number of clinical scales above a T-score of 70. This correlation was computed, of course, without adding the K correction to any of the clinical scales. In contrast to these positive results, Hunt et. al. (1948) and Silver and Sines (1962) found no differential diagnostic utility in using the K correction.

Several investigators have attempted to construct validity scales or indexes in addition to the four formally presented in the MMPI. Cofer, Chance and Judson (1949) designed the Mp Scale to detect both faked good and faked bad records. Gough (1954) developed the Ds Scale to detect attempts by normals to feign psychoneurosis. Osborn (1970) constructed the Moderator or Mo Scale to identify MMPI profiles frequently associated with undependable clinical judgements. Perhaps the most notable of all the additional

MMPI validity indicators has been the F minus K Index developed by Gough (1947). Gough proposed that the difference between raw F and K scores could be used as both an index of faking good and faking bad. After analyzing a large sample of MMPI profiles, he found this difference ranged from -28 to +25, with the median being approximately -9. Most normals were found to have F-K scores between -2 and -19. Gough suggested that F-K scores higher than +9 and lower than -7 indicated malingering and self-enhancement, respectively. Several investigators have demonstrated the effectiveness of the F-K index in identifying faked bad records (Anthoney, 1971; Branca and Podolnich, 1961; Gough, 1947; Hunt, 1948). Its effectiveness as an indicator of faking good has not been shown conclusively. Drasgow and Barnette (1957), Exner, McDowell, Pabst, Stackman and Kirk (1963), Gough (1950) and Hunt (1948) found that while faked good records generally yielded negative F-K scores, so did the records of many normals, especially college students. Because of this it was difficult to establish efficient cutting scores when using F-K to identify faked good records.

Self Focused Attention and Self Report Validity

As can readily be seen from the review above, a great deal of work has been directed at monitoring, preventing or correcting the influence response sets have on self report measures. For the most part, these efforts have centered

upon modifying the self report instruments themselves; i.e., balancing the number of true and false items, employing responses of equal social desirability, or developing validity indicators and suppressor variables. Almost no work has been directed toward the development of procedures which might foster a lessening in a respondent's tendency to employ response styles. Put another way, relatively few methods have been developed that promote a subject's frank and honest disclosure on self report measures. The absence of work in this area seems to have resulted from the generally accepted belief that a person's tendency to distort his self descriptions is, for the most part, unchangeable. Recent work by Pryor, Gibbons and Wicklund (1975) and Pfau (1976) has called the validity of this assumption into question, however. Based on Duval and Wicklund's (1972) theory of "objective self awareness", these workers found that subjects who complete self report measures under conditions which foster self focused attention -- that is, conditions which tend to direct the respondent's attention toward his own physical and psychological attributes rather than to the external environment -- produce more honest and valid descriptions of their personalities and behavior.

Pryor, Gibbons and Wicklund (1975) had a group of college aged subjects complete a face valid self report measure of "sociability". The scale consisted of sixteen

items such as "I have a difficult time making new friends" and the like. Half of the subjects completed the test while seated before a large mirror (High Objective Self Awareness Condition-OSA). The other half completed the test under normal conditions (Low OSA). The mirror was assumed to promote self focused attention in the subjects seated before it. A few days after completing this test, subjects were asked to return ostensibly to participate in another experiment. At that time they were seated in a cubical with another student who was actually a confederate of the experimenters. Two behavioral measures of sociability were obtained: the confederate rated each subject on a six point scale of sociability and a tape recording of the interaction allowed for a measure of the number of words spoken by the subject. These two overt measures of sociability were converted to z-scores, combined, and correlated with self report scores. For the control group (Low OSA) this correlation was .16 while for the mirror group (High OSA) it was .62. These correlations differed significantly ($p < .05$) and the results supported the hypothesis that self report validity can be improved by conditions which foster self focused attention. Subjects in the High OSA group seemed to offer more accurate accounts of their actual behavior.

In a somewhat different study, Pfau (1976) had two groups of college students complete the Minnesota Multi-

phasic Personality Inventory (MMPI). As in the Pryor, Gibbons and Wicklund (1975) study above, the experimental or High OSA group completed the test while seated in front of a large, conspicuous mirror; the control or Low OSA group completed it under normal conditions. Validity indices of the two groups were compared with the following results: the mirror group had significantly lower K-Scale scores ($p < .05$), significantly higher F-Scale scores ($p < .05$) and significantly higher Gough F minus K indices ($p < .01$). These differences appeared to indicate that the High OSA subjects were less prone to fake good and more prone to admit to some of their faults and weaknesses. In other words, subjects in the mirror condition seemed to produce more valid MMPI protocols.

The Theory of Objective Self Awareness

As stated earlier, the two studies cited above were based on Duval and Wicklund's (1972) theory of "objective self awareness". At the core of this theory are two important concepts. The first of these is the concept of "objective self awareness" itself. Objective self awareness is viewed as a state in which a person takes himself to be an object of attention and evaluation. Self focused attention is assumed to be a necessary component of objective self awareness. The second concept is that of "intra-self discrepancy". Intra-self discrepancy is assumed to exist when

a person engages in two contradictory behaviors or holds two contradictory opinions. More importantly, intra-self discrepancy exists when a person's actual behavior is perceived by him to be deviating from his standards of correctness or his aspirations. Thus, intra-self discrepancy is a state of psychological incongruence. It is important to note that a within self discrepancy may be positive or negative. When positive, a person's actual behavior has exceeded his aspirations. When negative, actual behavior has fallen short of aspirations. Given the existence of multiple intra-self discrepancies across multiple self related dimensions, self focused attention will result in attention being directed toward the most salient of these discrepancies. Thus, the straight A student who has just failed an important exam will, when focusing attention on himself, be struck by the salient negative discrepancy between behavior and standards on the dimension of achievement.

With these core concepts clarified, the most concise explication of the theory of objective self awareness is offered by Wicklund (1975):

> The theory of objective self-awareness as it stands presently is this: Conscious attention is viewed as dichotomous, having the property of being directed either toward the self or toward the environment. The direction of attention is guided by events that force attention inward, such as reflections of the self, and events that pull attention outward, such as distracting stimuli outside the self. Under objective self-awareness the person will experience either negative or positive affect, depending on whether attention is directed

> toward a negative or a positive discrepancy. The degree of affect is a joint function of the proportion of attention (over a time interval) focused on the discrepancy and the size of the discrepancy.
>
> The initial reaction to the onset of objective self-awareness is postulated to be self-evaluation. If the salient discrepancy is negative, the person will be increasingly cognizant of that discrepancy, owing to self-focused attention. In terms of operations, the discrepancy will loom larger. The converse should hold for positive discrepancies: The onset of objective self-awareness will create a heightened positive self-evaluation on the salient positive discrepancy.
>
> In trying to anticipate whether a person's discrepancy on some specified trait will be positive or negative, an atheoretical guideline will be useful. From all available evidence, especially in the area of achievement motivation, it is a reasonable assumption that virtually all naturally occurring discrepancies are negative. They can be rendered positive by a recent success experience, but it is also likely that the impact of such successes will dwindle with time. This is because aspirations rise and eventually surpass the individual's recently attained successes, re-creating negative discrepancies.
>
> Finally, there are two possible reactions to self-focused attention in addition to the initial reaction of self-evaluation. The first is of the nature of an avoidance or approach response. If the discrepancy in focus is positive, the person will welcome stimuli that bring on the objective state, and will tend to seek out self-focusing circumstances. If the salient discrepancy is negative, there will be an active avoidance of such stimuli, including efforts to create distractions. Further, and only in the case of negative discrepancies, an inescapable objective self-awareness will result in attempted discrepancy reduction. (p. 237-238)

Several lines of evidence reviewed by Wicklund (1975) lend support to the theoretical formulations presented above. Ickes, Wicklund and Ferris (1973) showed that both positive and negative real-ideal self discrepancies were perceived as larger by a group of High OSA subjects who were exposed to

tape recordings of their own voice or their mirror image. They found additionally that a group of High OSA subjects scored significantly lower than controls on a measure of self esteem. Duval, Wicklund and Fine (1974) found that subjects with a negative intra-self discrepancy remained in a mirrored room for shorter periods of time than subjects with positive discrepancies. The tendency to avoid states of objective self awareness by engaging in distractions or nervous habits such as smoking or hand tapping has been shown by Liebling, Seiber and Shaver (1974) and Dittman and Llewellyn (1969) respectively.

When viewed in the context of objective self awareness theory, the earlier documented inconsistancy between behavior and self report may be seen as a reflection of a negative discrepancy between a respondent's real self and ideal self. Using this paradigm the results of the Pryor, Gibbons and Wicklund (1975) and the Pfau (1976) studies may be explained in the following way: Subjects in both the High OSA and Low OSA conditions were stimulated to focus attention on themselves due to the nature of the task they were asked to complete (i.e.: answer questions about their personalities). Thus, for any particular test item, at least a moment of self focused attention and objective self awareness was induced. This moment of objective self awareness resulted in the recognition of a negative discrepancy between the sub-

ject's real and ideal status on the personality dimension or behavior in question. The negative affect associated with the recognition of the negative intra-self discrepancy motivated all subjects to escape objective self awareness. This was relatively easy for the Low OSA control group subjects; they could merely turn their attention away from the discrepancy and answer the question on the basis of their ideals. (It seems likely that these ideals would be more or less consistent with societal standards, hence the social desirability factor.) The High OSA subjects being constantly induced to focus attention on themselves could not escape objective self awareness as readily. To reduce the negative affect, they were compelled to reduce the discrepancy between their verbal report and their actual behavior. Because the dimensions tapped by personality test items are often relatively inflexible in nature (i.e.: dominance, introversion, extroversion) the chances that a subject's actual status could be improved or brought up to ideal standards quickly enough to reduce the discrepancy were quite small. High OSA subjects could, therefore, only reduce their intra-self discrepancies by making their verbal report more consistent with their actual behavior.

EXPERIMENTAL RATIONALE AND HYPOTHESES

The present study will attempt to replicate and further elaborate the results of Pfau (1976). Thus, the study will examine the effects of self focused attention on the MMPI performance of college aged subjects. More specifically, the study will examine the effects of self focused attention on subjects' self report honesty as reflected by the MMPI validity scales. In accordance with Duval and Wicklund's (1972) theory of objective self awareness, the major hypothesis will be that subjects who are stimulated to focus attention on themselves will become more objective in their self evaluations and will complete the MMPI in a more frank and truthful manner than subjects who are not stimulated to focus attention on themselves. Because college aged groups have generally been found to present overly favorable pictures of their personalities (Dahlstrom, Welsh & Dahlstrom, 1972), self focused attention should lead, in their case, to a reduction in the tendency to fake good.

The validity indicators of major concern will be the K-Scale, the F-Scale and the F minus K Index. The K-Scale will be assumed to measure defensiveness or faking good. It is hypothesized that K scores will be lower for self focused subjects. The F-Scale will be assumed to measure subjects' willingness to admit to their faults, weaknesses

and less socially desirable characteristics. It is hypothesized that F scores will be higher for self focused subjects. The F minus K Index will be assumed to yield a net total of faking good. It is hypothesized that F-K scores will be higher for self focused subjects.

No specific hypotheses will be made concerning the L-Scale. This for two reasons. First, it is assumed that college aged subjects will show very little variability on a measure of deliberate lying. That is, almost all subjects are expected to achieve very low L scores. It is assumed that rather than consciously lying, subjects will fake good in a more subtle fashion best monitored by the K-Scale. Second, if a small number of subjects do set out to deliberately falsify their MMPI, it is doubtful that the promotion of self focused attention will stop them. Assuming that these deliberate liars are randomly distributed between experimental and control groups, no differences in L scores should be seen. It might be noted in this regard that Pfau (1976) while finding differences in the K and F scores of a self focused attention group and a control group, found no differences in their L scores.

Like the Pryor, Gibbons, and Wicklund (1975) experiment and the Pfau (1976) experiment, the present study will employ a mirror to promote self focused attention in one of the experimental groups. This group will be referred to as

the High Objective Self Awareness Mirror group (High OSA-Mirror). In addition, with hopes of increasing the generalizability of the findings and meeting the criterion of multi-operationalism, a second self focused attention-high objective self awareness condition will be employed. In this condition self focused attention will be stimulated by a handwritten description of subjects' physical characteristics. The description will include only relatively objective data such as height, weight, eye color and hair color. Like the mirror, the physical descriptions will be placed directly in the subjects' line of sight. Subjects in this condition will be referred to as the High Objective Self Awareness Description group (High OSA-Description). In addition to the two High OSA experimental groups, a control group, not presented with any self focusing stimuli, will be employed. Subjects in this condition will be referred to as the Low Objective Self Awareness Control group (Low OSA-Control).

That self focused attention and objective self awareness will be stimulated by the mirror and physical description is predicated on the theoretical proposition that any stimuli, symbol or reflection that reminds a person of his objective status on any self related dimension will cause the person to shift attention toward himself and increase his objective awareness of his status on all self related

dimensions (Wicklund, 1975). In this study it is assumed that the mirror and description will remind subjects of their objective status on physical dimensions and, thus, increase their objective awareness of their status on personality dimensions.

In accordance with Duval and Wicklund's (1972) theory, it is assumed that objective self awareness leads people to recognize and then reduce their negative intra-self discrepancies. In the present study, it is, therefore, postulated that High OSA Mirror and Description subjects will recognize and then reduce the discrepancy between their idealized self report and their actual behavior. (This process will, of course, be the one assumed to mediate High OSA subjects' honest completion of the MMPI.) Consistent with the theory of objective self awareness, it is hypothesized that recognition of negative intra-self discrepancies will lead High OSA subjects to experience increased states of negative affect. While taking the MMPI, High OSA subjects are expected to feel more anxious, less happy, experience their environment as more unpleasant and their task as more difficult than Low OSA controls. These effects will be assumed to be reflected in subjects' scores on several semantic differential scales administered after they complete the MMPI. The semantic differential, developed by Osgood and his associates (Osgood, Suci and Tannenbaum,

1957) presents subjects with a seven point scale anchored at the extremes with bipolar adjectives (e.g., good-bad, strong-weak, active-passive). Subjects are asked to rate a particular stimulus object by checking a point along the scale continuum. Factor analytic studies, summarized by Osgood (1962), have shown that semantic differential scales generally load on one of three factors: the "evaluative" (good-bad) factor, the "potency" (strong-weak) factor and the "activity" (active-passive) factor. Numerous studies have demonstrated the overall validity, reliability and usefulness of the semantic differential (Nunnally, 1961; Osgood, 1962; Osgood et. al., 1957.) It is recognized that semantic differential scales are self report measures and therefore vulnerable to faking. All subjects, experimental and control, will therefore complete these scales under conditions that foster self focused attention (in front of a mirror) in hopes that more valid reports will be elicited.

Recognition and reduction of negative intra-self discrepancies are expected to have one further side effect that can be easily measured. The mental operations associated with discrepancy reduction should take a certain amount of time. It is therefore hypothesized that the High OSA Mirror and Description subjects will take more time to complete their MMPI's than Low OSA controls.

To recapitulate, the major hypotheses to be tested by this study are:

1. Subjects in the High OSA Mirror and Description groups will complete the MMPI in a more frank and objective manner than Low OSA controls. High OSA subjects will fake good less than Low OSA controls. These effects will be reflected in the validity scale scores of subjects in the following manner:
   a) High OSA subjects will have lower K-Scale scores than controls.
   b) High OSA subjects will have higher F-Scale scores than controls.
   c) High OSA subjects will have higher F minus K Index scores than controls.
2. High OSA subjects will take more time to complete the MMPI than Low OSA controls.
3. High OSA subjects will experience more negative affect while completing the MMPI than Low OSA controls. Semantic differential scales will show High OSA subjects to be more anxious, less happy, experience their environment as more unpleasant, and their task as more difficult than Low OSA controls.

4. There will be no differences between the validity scales scores, the time taken to complete the MMPI or the negative affect scores of subjects in the different High OSA conditions. That is, no differences are expected between the High OSA Mirror and the High OSA Description group.

METHOD

Subjects.

The subjects were 66 undergraduate volunteers from introductory psychology classes. Twenty-nine were males, 37 were females. Six subjects, one from Condition I (High OSA-Mirror), two from Condition II (High OSA-Description) and three from Condition III (Low OSA-Control) were deleted from the study sample because they evidenced significant psychopathology. The criterion for deletion, established before the start of the experiment was one or more MMPI clinical scales over a T-score of 80 without the addition of the K correction. The ages of the 60 subjects that remained in the study sample ranged from 17 to 22 with their mean age being 18.27 and the standard deviation being 0.45.

Measures.

A. Booklet Form-R of the Minnesota Multiphasic Personality Inventory (MMPI).

B. Self Report Follow-up Schedule (Pfau, 1978 see Appendix A). The Self Report Follow-up Schedule (SRFS) consists of six seven point semantic differential scales. It was designed for use in this experiment as a measure of subjects' affective state while taking the MMPI.

Twelve MMPI scale scores were obtained for each subject: L, F, K, Hs (Hypochondriasis), D (Depression), Hy (Hysteria), Pd (Psychopathic Deviate), Pa (Paranoia), Pt (Psychasthenia), Sc (Schizophrenia), Ma (Mania) and Si (Social Introversion). In addition, Gough F minus K Index scores were computed.

Five measures of negative affect were obtained from the semantic differential scales contained in items 1 through 3 on the Self Report Follow-up Schedule. Each subject was scored for his report of anxiety while taking the MMPI (Item 1a), his report of unhappiness while taking the MMPI (Item 1b), his rating of testing room unpleasantness (Item 2) and his rating of task difficulty (Item 3). Scores on these items could range from one to seven with seven representing the extreme negative affect pole on each scale. A "total negative affect" score was also obtained for each subject by computing the sum of his scores on items 1a, 1b, 2 and 3. Thus, total negative affect scores could range from a low of 4 to a high of 28.

Subjects in Condition I (High OSA-Mirror) and Condition II (High OSA-Description) also received scores for their report of noticing the self focusing stimuli presented to them (i.e.: the mirror or the physical description) and the strength of their reaction to the self focusing stimuli. These measures were obtained from Items 4 and 5 on the Self Report Follow-up Schedule. The keying of the semantic dif-

ferential scales of Items 4 and 5 was opposite that of the other scales in the Schedule. Thus, for these two items 7 represented the "noticed frequently" and "reacted strongly" poles of the continuum; 1 represented the "noticed infrequently" and "reacted hardly at all" poles.

In addition to the scores mentioned above, the time in minutes to complete the MMPI was recorded for all subjects.

Procedure.

Subjects were stratified by sex and randomly assigned to one of three conditions. Conditions I and II were High Objective Self Awareness experimental conditions; Condition III was a Low OSA control condition. Twenty subjects were assigned to each condition. Eight males and 12 females were in Condition I (High OSA-Mirror); 10 males and 10 females were in Condition II (High OSA-Description); eight males and 12 females were in Condition III (Low OSA-Control).

All subjects were asked to complete the MMPI with the following verbal instructions: "This is a personality questionnaire. I would like you to answer questions 1 through 399 and tell me when you are done. I will be in room 1036 down the hall where you checked in. There is no identifying information on your answer sheet, so all the results are anonymous and confidential. I will not be able to report to you the results of your test." After giving these instruc-

tions, the experimenter left the room. All subjects completed the MMPI while seated at a desk in a small, comfortable room.

The differences between the conditions were as follows. In Condition I (High OSA-Mirror) subjects completed the MMPI while seated before a large conspicuous mirror. The mirror was a two-way vision mirror built directly into the wall of the room. The way the lighting was arranged, subjects could see only their own reflections and nothing in the adjoining room.

In Condition II (High OSA-Description) subjects completed the MMPI while seated before a large handwritten description of their physical characteristics. This description included height, weight, age, hair color, eye color, sex and race (Appendix B). The description information was obtained verbally from the subjects by the experimenter. The experimenter recorded the information in bold letters on the physical description sheet and then tacked the sheet to a board directly in front of the subject. No explanation for this procedure was offered to the subjects. If a subject requested an explanation (which surprisingly occurred only a few times), he was told that everything would be explained after the experiment was over. After the physical description was affixed in front of the subject, he was given the standard instructions and asked to complete the MMPI.

In Condition III (Low OSA-Control) subjects completed the MMPI under normal conditions without being presented with a mirror or a physical description.

It should be noted that subjects in all three conditions completed the MMPI in almost identical rooms. That is, all the rooms contained a two way mirror. In Conditions II and III the mirror was covered completely with heavy wrapping paper and subjects were seated with their backs to it. Subjects in Condition II had only the physical description in their line of sight. Subjects in Condition III had a blank wall in front of them.

After completing the MMPI all subjects reported to another room where the experimenter was located. At this point, the time subjects took to complete the MMPI was recorded unobtrusively. Subjects were seated at a large table in front of a large mirror similar to those in the other rooms. The experimenter also was seated at this table perpendicular to the subjects. Subjects were then asked to complete the Self Report Follow-up Schedule which was entitled only with the university's code name for the experiment (i.e.: Experiment Arizona). Subjects in Experimental Conditions I and II completed all the items, 1 through 5. For subjects in Condition I (High OSA-Mirror), items 4 and 5 had the words "physical description" blacked out so these items read "How frequently did you notice the mirror in

front of you?" and "How did you react to the presence of the mirror?" respectively. For subjects in Condition II (High OSA-Description) items 4 and 5 had the word "mirror" blacked out so the items read "How frequently did you notice the physical description in front of you?" and "How did you react to the presence of the physical description?" respectively. Subjects in Condition III (Low OSA-Control) were asked to complete only items 1 through 3.

After completing the Self Report Follow-up Schedule subjects were given a Debriefing Sheet (Appendix C) to read. The Debriefing Sheet explained the rationale of the experiment and contained relevant information regarding the MMPI. After they had read the Debriefing Sheet any further questions subjects had were answered. They were then thanked and released.

RESULTS AND FINDINGS

Validity Indicators.

Tables 1, 2 and 3 show the results of the analyses of variance for the effect of experimental condition on K-Scale, F-Scale, and F minus K Index scores respectively. As can be seen, experimental condition significantly effected K scores (F=3.86; df=2,54; $p < .05$) and F minus K Index scores (F=4.07; df=2,54; $p < .05$), but did not effect F scores (F=1.48; df=2,54).

Table 1

Analysis of Variance of K-Scale Scores for Mirror, Description and Control Groups[a]

Source	df	MS	F
Condition	2	190.03	3.86*
Sex	1	5.80	0.12
Condition X Sex	2	4.14	0.08
Residual	54	49.29	

*$p < .05$

[a]All MMPI scores are T scores except for the F minus K Index which were computed from raw scores. Also, Hs, Pd, Pt, Sc and Ma scale scores were computed without the addition of the K correction.

Table 2

Analysis of Variance of F-Scale Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	53.65	1.48
Sex	1	516.04	14.27***
Condition X Sex	2	28.91	0.80
Residual	54	36.16	

***$p < .001$

Table 3

Analysis of Variance of F minus K Index Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	116.42	4.07*
Sex	1	83.90	2.94
Condition X Sex	2	9.35	0.33
Residual	54	28.58	

*$p < .05$

Table 4 shows the means and standard deviations of K-Scale, F-Scale and F minus K Index scores by condition. A series of t-tests showed Description subjects to have significantly higher K scores than Mirror subjects (t=2.89;

df=38; p < .01) or Control subjects (t=2.06; df=38; p < .05). The K scores of the Mirror and Control groups did not differ significantly (t=0.41; df=38). The Description group had significantly lower F minus K scores than the Mirror group (t=2.73; df=38; p < .01). Differences that approached significance were found between the F minus K scores of the Description and Control groups (t=1.99; df=38; p < .10) with the Description group scoring lower. The F minus K scores of the Mirror and Control groups did not differ significantly (t=0.18; df=38).

Table 4

Group Means and Standard Deviations for K-Scale, F-Scale and F minus K Index Scores

Scale		Condition I (Mirror)	Condition II (Description)	Condition III (Control)
K	Mean	50.00	55.80	50.85
	S.D.	5.03	7.45	7.75
F	Mean	55.35	53.20	55.55
	S.D.	5.33	6.79	7.64
F-K	Mean	-7.10	-11.20	-7.40
	S.D.	3.75	6.79	7.64

Time to Complete the MMPI.

Table 5 shows the results of the analysis of variance for the effect of experimental condition on the time taken to complete the MMPI. Table 6 shows group means and standard deviations for time to complete the MMPI. As can be seen no significant differences were found among the groups on this variable.

Table 5

Analysis of Variance of Time to Complete the MMPI for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	59.23	0.70
Sex	1	178.15	2.11
Condition X Sex	2	23.91	0.28
Residual	54	84.47	

Table 6

Group Means and Standard Deviations for Time to Complete the MMPI

Scale		Condition I (Mirror)	Condition II (Description)	Condition III (Control)
Time in minutes	Mean	38.85	41.70	42.15
	S.D.	7.13	10.26	9.66

Negative Affect (Self Report Follow-up Schedule Scores).

Table 7 shows the analysis of variance for the effect of experimental condition on Total Negative Affect Scores. As can be seen, no differences due to condition were found (F=0.70; df=2,54). Tables 8, 9, 10, and 11 show the analyses of variance for the effect of experimental condition on the individual negative affect scores, Items 1a, 1b, 2, and 3 on the Self Report Follow-up Schedule. Table 8 shows no

differences among the groups on Item 1a, report of anxiety while taking the MMPI (F=1.58; df=2,54). Table 9 shows no differences among the groups on Item 1b, report of unhappiness while taking the MMPI (F=1.17; df=2,54). Table 10 shows no differences among the groups on Item 2, ratings of testing room unpleasantness (F=0.29; df=2). Table 11 shows no differences among the groups on Item 3, ratings of task difficulty (F=2.95; df=2,54). Table 12 shows the means and standard deviations for negative affect scores by condition.

Table 7

Analysis of Variance of Total Negative Affect Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	12.83	1.50
Sex	1	33.45	3.91*
Condition X Sex	2	19.64	2.30
Residual	54	8.55	

*$p < .05$

Table 8

Analysis of Variance of Anxiety Scores (SRFS Item 1a) for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	3.45	1.58
Sex	1	8.75	3.00*
Condition X Sex	2	1.73	0.79
Residual	54	2.19	

*$p < .05$

Table 9

Analysis of Variance of Unhappiness Scores (SRFS Item 1b) for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	1.54	1.17
Sex	1	0.40	0.30
Condition X Sex	2	0.40	0.31
Residual	54	1.31	

Table 10

Analysis of Variance of Room Unpleasantness Scores (SRFS Item 2) for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	0.55	0.29
Sex	1	5.07	2.67
Condition X Sex	2	1.26	0.66
Residual	54	1.90	

Table 11

Analysis of Variance of Task Difficulty Scores (SRFS Item 3) for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	2.49	2.95
Sex	1	0.00	0.00
Condition X Sex	2	2.82	3.35
Residual	54	0.84	

Table 12

Group Means and Standard Deviations for All Negative Affect Scores

Scale		Condition I (Mirror)	Condition II (Description)	Condition III (Control)
Total Negative Affect	Mean	10.15	9.05	10.40
	S.D.	2.98	3.10	3.10
Anxiety Item 1a	Mean	2.20	1.95	2.70
	S.D.	1.45	1.28	1.78
Unhappiness Item 1b	Mean	3.50	3.30	2.95
	S.D.	1.19	1.23	1.05
Room Unpleasantness Item 2	Mean	2.50	2.30	2.55
	S.D.	1.19	1.59	1.36
Task Difficulty Item 3	Mean	1.95	1.50	2.20
	S.D.	1.10	0.76	0.95

Frequency of Noticing and Strength of Reaction to the Self Focusing Stimuli

Table 13 shows the analysis of variance for the effect of experimental condition on Self Report Follow-up Schedule (SRFS) Item 4, subjects' report of how frequently they noticed the self-focusing stimuli (mirror/physical description) in front of them. As can be seen, significant differences between the groups were found ($F=20.15$; $df=1,36$; $p < .001$). Table 15 which presents the group means and standard deviations for Items 4 and 5 shows the Mirror group noticing the mirror far more frequently than the Description group noticed the physical description.

Table 14 shows the analysis of variance for the effect of experimental condition on SRFS Item 5, subjects' report of the strength of their reaction to the self focusing stimuli. As can be seen, significant differences were found between the groups ($F=13.26$; $df=1,36$; $p < .001$); Table 15 shows the Mirror group reporting much stronger reactions to the mirror than the Description group reports having to the physical descriptions. (The reader is reminded that the control group was excluded from above analyses because they were not exposed to any self focusing stimuli.)

Table 13

Analysis of Variance of Frequency of Noticing Self Focusing Stimuli (SRFS Item 4) for Mirror and Description Groups

Source	df	MS	F
Condition	1	55.33	20.15***
Sex	1	0.20	0.07
Condition X Sex	1	0.68	0.62
Residual	36	2.75	

***$p < .001$

Table 14

Analysis of Variance of Strength of Reaction to Self Focusing Stimuli (SRFS Item 5) for Mirror and Description Groups

Source	df	MS	F
Condition	1	24.10	13.60***
Sex	1	3.55	2.01
Condition X Sex	1	2.57	1.45
Residual	36	1.77	

*** $p < .001$

Table 15

Group Means and Standard Deviations for Self Report Follow-up Schedule Items 4 and 5

SRFS Item		Condition I (Mirror)	Condition II (Description)
Item 4-Frequency of Noticing Self Focusing Stimuli	Mean	3.95	1.60
	S.D.	2.04	1.05
Item 5-Strength of Reaction to Self Focusing Stimuli	Mean	2.95	1.45
	S.D.	1.76	0.76

Intercorrelations Among the Major Study Variables

Table 16 shows the intercorrelations of K-Scale, F-Scale, F minus K Index, Total Negative Affect, time to complete the MMPI, SRFS Item 4 and SRFS Item 5 scores.

Other MMPI Scales

Analyses of variance for the effect of experimental condition on each MMPI clinical scales (Hs, D, Hy, Pd, Pa, Pt, Sc, Ma and Si) and the L-Scale were conducted. No differences due to condition were found for L, D, Hy, Pd, Pa, Sc or Ma scale scores. Significant differences due to experimental condition were found for the Hs, Pt, and Si scale scores. The results of the analyses of variance for the effect of experimental condition on Hy, Pt, and Si scores are presented in Tables 17, 18, and 19 respectively. Table 20 shows the means and standard deviations for these scores by condition.

A series of t-tests showed the Description group to have significantly lower Hs scores the Mirror group (t=3.33; df=38; $p < .01$) or the Control group (t=2.05; df=38; $p < .05$). Hs scores of the Mirror and Control groups did not differ significantly (t=0.95; df=38).

Table 16

Intercorrelation of K, F, F minus K, Time to Complete the MMPI, Total Negative Affect, SRFS Item 4 and SRFS Item 5 Scores

	K	F	F-K	Time	Negative Affect	Item 4 SRFS (Notice)	Item 5 SRFS (Strength)
Item 5 SRFS (Strength)	.15	-.18	.11	.08	.43**	.53**	-
Item 4 SRFS (Notice)	.26	.18	.10	.05	.20		
Total Negative Affect	.13	-.07	.19	.08			
Time	.16	.02	.17				
F-K	-.87***	.76***	-				
F	-.35**	-					

**p< .01

***p< .001

The Description group had significantly lower Pt scores than the Mirror group (t=2.53; df=38; $p < .05$). The Pt scores were not significantly different between the Description and Control groups (t=1.20; df=38) or between the Mirror and Control groups (t=1.40; df=38).

The Description group had significantly lower Si scores than either the Mirror group (t=3.24; df=38; $p < .01$) or the Control group (t=2.97; df=38; $p < .01$). Si scores were not significantly different between the Mirror and Control groups (t=0.69; df=38).

Table 17

Analysis of Variance of Hs Scale Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	328.54	4.68**
Sex	1	53.70	0.76
Condition X Sex	2	15.86	0.23
Residual	54	70.26	

**$p < .01$

Table 18

Analysis of Variance of Pt Scale Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	370.10	3.28*
Sex	1	5.55	0.05
Condition X Sex	2	57.70	0.51
Residual	54	112.91	

*$p < .05$

Table 19

Analysis of Variance of Si Scale Scores for Mirror, Description and Control Groups

Source	df	MS	F
Condition	2	282.49	5.59**
Sex	1	278.80	5.51*
Condition X Sex	2	74.11	1.47
Residual	54	50.58	

* $p < .05$
** $p < .01$

Table 20

Group Means and Standard Deviations for Hs, Pt, and Si Scale Scores

Scale		Condition I (Mirror)	Condition II (Description)	Condition III (Control)
Hs	Mean	39.25	31.10	36.75
	S.D.	7.28	8.19	9.17
Pt	Mean	37.15	28.60	32.35
	S.D.	11.52	9.74	9.98
Si	Mean	53.10	45.40	51.25
	S.D.	9.39	4.95	7.33

Sex Differences

As can be seen from the analyses of variance in Tables 2, 7, 8, and 19, significant differences due to sex were found for F, Total Negative Affect, SRFS Item 1a (Anxiety) and Si scores. Males had significantly higher F-Scale scores ($F=14.27$; $df=1,54$; $p < .001$), significantly higher SRFS Item 1a Anxiety scores ($F=3.00$; $df=1,54$; $p < .05$) than females. Females had significantly higher Si scores than males ($F=5.51$; $df=1,54$; $p < .05$). Table 21 shows the means and standard deviations for F, Total Negative Affect, SRFS Item 1a Anxiety and Si scores by sex.

Table 21

Means and Standard Deviations for F-Scale, Total Negative Affect, Anxiety (SRFS Item 1a) and Si Scale Scores for Males and Females

Scale		Males	Females
F	Mean	57.92	52.24
	S.D.	7.12	5.08
Total Negative Affect	Mean	10.65	9.26
	S.D.	3.11	2.94
SRFS Item 1a Anxiety	Mean	2.69	1.97
	S.D.	1.54	1.45
Si	Mean	47.12	52.06
	S.D.	6.43	8.54

DISCUSSION OF THE RESULTS AND FINDINGS

The Validity Indicators

The results failed to confirm Hypothesis 1 which stated that subjects in the High OSA conditions, the Mirror and Description groups, would complete the MMPI in a more frank and objective manner than subjects in the Low OSA control group. The High OSA Mirror group achieved K-Scale, F-Scale, and F minus K Index scores that were essentially the same as those of the Low OSA control group. The High OSA Description group, while achieving F-Scale scores no different than those of the Mirror and control groups, achieved significantly higher K-Scale scores and significantly lower F minus K scores than either of the other two groups. This finding is in direct contrast to Hypothesis 1 and appears to indicate that rather than being more frank and objective in their completion of the MMPI, the Description group was actually less honest and more defensive than the Mirror or control groups.

The finding that the Mirror group did not differ from controls on any validity scale scores fails to corroborate the results of Pfau (1976) who found that High OSA Mirror subjects had lower K, higher F, and higher F minus K scores than Low OSA controls. Comparison of Pfau's (1976) results (Appendix D) with the results of the present study shown in

Table 4 reveals that the Mirror groups in both experiments had essentially the same K-Scale, F-Scale and F minus K Index scores. It is the validity scale scores of the control groups of the two studies that differ markedly and consistently. Pfau's (1976) control group seemed to fake good more than the control group in the present study: their K scores were higher (t=1.76; df=33; $p < .10$), their F scores were lower (t=1.72; df=38; $p < .10$), and their F minus K scores were significantly lower (t=2.30; df=33; $p < .05$) than those of the controls in this study. Thus, it is the differences between the two studies' control groups and not differences between their Mirror groups that seems to account for their disparate results.

The question now becomes: what differences in the experimental methods of the two studies might have contributed to the demonstrated control group differences. No explanation seems readily apparent. The experimental procedures of the two studies, at least insofar as they were applied to the Mirror and Control groups, were essentially the same. Both experiments employed volunteer undergraduate psychology students from Loyola University of Chicago as subjects, reducing the likelihood that the studies' samples differed on any important demographic variables. Both experiments were carried out in the same laboratory, reducing the likelihood that extraneous environmental variables might have differed

significantly. The fact that the studies were carried out within 18 months of each other reduces the likelihood that the socio-political tenor of the youth subculture had changed to the extent that it might affect subjects' scores on a test like the MMPI.

The only salient differences between the two studies are these: 1) Pfau's (1976) subjects completed the MMPI as part of a psychological test battery which also included the Rorschach and TAT. Subjects in the present study completed only the MMPI. 2) Pfau's (1976) subjects were aware prior to volunteering that their experiment would involve taking a number of personality tests which would be administered by clinical psychology graduate students. Subjects in the present experiment had no prior knowledge of the type of psychological experiment for which they had volunteered. 3) Pfau's (1976) subjects volunteered for an experiment they knew would last three hours. Subjects in the present study volunteered for an experiment they knew would last only one hour.

It is not intuitively obvious how any of these selection differences might account for Pfau's (1976) control group being more "defensive" than the present study's control group. In fact, examining these selection differences in isolation might lead one to expect the present study's controls to be more defensive. Present controls had a per-

sonality test "sprung" on them; this could conceivably increase their anxiety and defensiveness, especially if they had expected a different type of task. Pfau's (1976) controls knowingly volunteered to take not one, but a battery of psychological tests. It seems likely, therefore, that highly defensive subjects never would have volunteered for Pfau's (1976) experiment in the first place and were thus pre-selected out of the study sample. The subjects who did volunteer seem more likely to have been unusually open and self disclosing, than defensive and constricted. Of course, the possibility does exist that Pfau's (1976) sample consisted of many highly defensive, overly self confident people who volunteered to take a battery of personality tests to exhibit just how "well adjusted" they were. This type of test taking attitude might engender a faked good protocol and could conceivably account for the validity scale configuration differences noted between the two control groups.*

*The reader might note that even when Pfau's (1976) sample and the present sample were combined, the Mirror group did not differ significantly from the control group with respect to K, F or F minus K scores (see Appendix E).

The finding that the High OSA Description group faked good to a greater extent than either the Mirror or control groups is also difficult to explain. One could simply assume that Duval and Wicklund's (1972) theory of objective self awareness is amiss; and, that self focused attention has no effect on self report validity, but then one would have to explain why the K and F minus K scores of the Description group were not simply the same as those of the other two groups. Alternately, one might assume the theory of objective self awareness to be valid, but postulate that the physical description placed before the Description subjects was simply not a salient enough stimulus to promote self focused attention. Some evidence to support that this might have been the case is presented in Table 15 which shows Description subjects reporting that they noticed the physical descriptions less frequently and reacted to them less strongly than the Mirror group noticed or reacted to the mirror. However, even if one assumed these reports to be accurate and accepted that the physical descriptions were lacking in saliency, one would still be left with explaining why Description subjects did not have K and F minus K scores similar to those of controls.

The issue of stimulus saliency brings another explanation to mind. Perhaps, rather than being a less potent self focusing stimulus than the mirror, the physical des-

cription was even more potent. It has been assumed, thus far, that the relationship between self focusing stimuli potency and the degree of self focused attention is linear and continuous: the more potent the self focusing stimulus, the more self focused attention it promotes. It may be, however, that the relationship between stimulus saliency or potency and the degree of self focused attention is neither linear or continuous. It is possible that low-salient stimuli promote very little self focused attention, moderately high salient stimuli promote a good deal of self focused attention, but that very high salient stimuli promote even less self focused attention than low salient stimuli. A clinical example serves to illustrate this relationship. A psychotherapist has very little chance of promoting self exploration in a client if he does not challenge or confront the client at all. His chances of promoting self exploration in the client become greater if he challenges and confronts the client to a moderate degree. However, if the therapist challenges or confronts the client too soon or too strongly, rather than overcoming the resistance, he may cause the client to become even more defensive than if he had said nothing at all. Thus, it may be that the physical description made Description subjects so self conscious that they became more defensive than they would have been if they, like the control subjects, were presented with no self focusing stimuli at all.

Some evidence may be adduced to support this formulation. First, an examination of the experimental procedure shows that, at least on the face of things, Description subjects were presented with a far more salient self focusing stimulus than the Mirror group. Before completing the MMPI, Description subjects were asked their height, weight, eye color, hair color, age, sex and race. They then watched as the experimenter recorded this information in unusually bold print and affixed the physical description sheet in front of them without any explanation of purpose. Assuming the usual level of suspiciousness in psychology experiment participants, it is hard to believe that these subjects did not notice or wonder about the physical descriptions in front of them. It seems more likely that they thought the experimenter was engaging in some type of ruse or deception, and that this made them uncomfortable and self conscious. Mirror subjects, on the other hand, were asked no unusual questions and probably had little idea that the mirror in front of them was even part of the experimental manipulation. After all, the mirror, rather than being an unusual or conspicuous addition, seemed to be a permanent fixture of the laboratory environment that was only coincidentally in their visual field. Given these procedural differences, it is not unreasonable to assume different degrees of suspiciousness, self consciousness and defensiveness between the Mirror and Description groups.

Of course, the data presented in Table 15 seem, on the surface, to contradict the argument that the physical description made subjects so self conscious that they became more defensive in their completion of the MMPI. This data shows Description subjects reporting that they hardly noticed or reacted to the physical description at all. On a seven point scale (one representing the "noticed infrequently" and "reacted hardly at all" pole of the continuum, seven representing the "noticed frequently" and "reacted strongly" pole), Description subjects attained a group mean of 1.60 and a standard deviation of 1.05 for their frequency of noticing the physical description and a mean of 1.45 and a standard deviation of 0.76 for the strength of their reaction to the description. The extremity and lack of variability in these scores coupled with the saliency of the experimental procedure surrounding the use of the physical descriptions leads one to suspect that Description subjects simply were not reporting accurately about their reaction to the physical descriptions. (It is hardly necessary at this point to remind the reader that self reports are often inaccurate.) To use another clinical analogue, it appears that Description subjects employed the defense mechanism of reaction formation: rather than reporting that the physical descriptions affected them greatly, (as the validity scale results indicate) they reported not having been affected at all.

One more important point should be noted. The hypothesis that High OSA subjects would fake good less than Low OSA controls was predicated on the assumption that college aged populations do, indeed, have a tendency to fake good. It was assumed, in other words, that under normal conditions the subjects employed in this study would have higher K-Scale scores than F-Scale scores. The basis for this assumption comes not only from clinical lore, but from research (Exner et. al., 1963; Gough, 1950; Hunt, 1948). Dahlstrom, Welsh and Dahlstrom (1972) state explicitly in the MMPI Handbook that college students generally achieve F scores comparable to those of the general population, but achieve K scores that are higher by almost one standard deviation. Thus, it was surprising to find that in the present study F-Scale scores were higher than K-Scale scores for the Mirror group, the control group and the study sample taken as a whole. The Mirror group had a mean F score of 55.35 and a mean K score of 50.00. The control group had a mean F score of 55.55 and a mean K score of 50.85. The study sample of 60 subjects had a mean F score of 54.70 and a mean K score of 52.22. Only the Description group had mean F lower than mean K. Their mean F score was 53.20 and their mean K score was 55.80. In short, it appears that the college students employed as subjects in this study were more likely to fake bad than fake good.

their negative intraself discrepancies (i.e.: their faults). The finding that a normal group, college aged or otherwise, had a tendency to admit to these negative discrepancies represents a gap in the theory rather than a confirmation of it.

Time to Complete the MMPI

The results failed to confirm Hypothesis 2 which stated that the High OSA groups would take more time to complete the MMPI than the Low OSA control group. As can be seen from Tables 5 and 6, almost no differences at all were found among the three groups on their time taken to complete the test.

Hypothesis 2 was, of course, predicated on the assumption that the Mirror and Description groups would be stimulated to become objectively self aware and complete their MMPI's in a more frank and honest manner than controls. This increased objectivity, it was thought, would be mediated by the process of discrepancy reduction. It was further thought that the mental operations associated with discrepancy reduction would take time. However, given the results discussed in the previous section, it would be fallacious to assume that either of the High OSA groups actually experienced increased states of objective self awareness or undertook any intrapsychic processes that might be likened to discrepancy reduction. Thus, while it may be

true that objective self awareness increases the time that subjects take to complete self report measures, the present results preclude any direct confirmation or disconfirmation of this formulation. What can be said is that subjects who fake good (the Description group) seem to take no less time to complete self report measures than subjects who answer more honestly.

Negative Affect

The results failed to confirm Hypothesis 3 which stated that subjects in the High OSA groups would experience more negative affect while taking the MMPI than Low OSA controls. The results contained in Tables 7, 8, 9, 10, and 11 show no differences among the three groups for degree of total negative affect experienced, degree of anxiety experienced, degree of unhappiness experienced, ratings of environment unpleasantness or ratings of task difficulty.

Like Hypothesis 2, Hypothesis 3 was predicated on the assumption that objective self awareness would be heightened in the Mirror and Description groups. It would then follow, according to OSA theory, that subjects in these groups would experience the negative affect associated with the recognition of negative intraself discrepancies. Given that we have no reason to believe that objective self awareness was heightened in either the Mirror or Description group, the finding that no differences were found among any of the

study groups on the degree of negative affect experienced should come as no surprise. While states of objective self awareness might lead to increased experience of negative affect, the present results preclude any direct confirmation or disconfirmation of this formulation. Again, what can be said is that subjects who fake good on self report measures like the MMPI seem to experience no greater or lesser degrees of negative affect than subjects who complete the measures in a more frank and objective manner.

Similarities vs. Differences in the High OSA Groups

In essence, the results failed to confirm Hypothesis 4 which stated that there would be no differences between the validity scale scores, the time taken to complete the MMPI, and the negative affect scores of the two High OSA groups. As has already been noted, the Mirror and Description groups differed significantly on two of the three validity indicators examined. Description subjects had higher K scores and lower F minus K Index scores than Mirror subjects. That no differences were found between these two groups on their time taken to complete the MMPI and their negative affect scores is mitigated by the finding that neither group differed significantly from the control group on these measures. Thus, in terms of time taken to complete the MMPI and degree of negative affect experienced, the two High OSA groups were no more similar to each other than they are to the Low OSA control group.

Other MMPI Scales

Significant differences due to experimental condition were found for three of the nine MMPI clinical scales examined: Hs, Pt and Si. Description subjects scored significantly lower than Mirror subjects on Hs, Pt and Si, and significantly lower than control subjects on Hs and Si. No differences were found between the Mirror and control groups on any of the scales. Thus, for the clinical scales where differences were found, a similar pattern of group mean scores emerged: Description subjects scored lower than either the Mirror or control groups whose scores were essentially the same (see Tables 17 through 20).

Given that the Description group has been shown to be more defensive than either of the other two groups, it is not surprising that some of their clinical scale scores would be lower. It will be remembered that several investigators have found a negative correlation between K-Scale scores and clinical scale scores (Goldberg, 1969; Hathaway and Meehl, 1951; Hathaway and Monachesi, 1961).

More difficult to explain is why significant differences were found among the groups on Hs, Pt and Si and not on the other clinical scales. One explanation might be that this was simply due to chance. Given the number of statistical comparisons conducted in this study, the probability

that some clinical scales would show differences across experimental condition was greatly increased. It should be noted in this regard that Goldberg (1969) has found robust positive correlations between the Hs, Pt, and Si scale scores of college groups. Thus, the fact that differences were found among the three groups on any one of these scales increases the likelihood that differences would be found on all of them.

It seems possible also that these three MMPI scales would load heavily on a "self focused attention" factor. Hs could be construed as a measure of concern with the physical structures of the self, Pt as a measure of preoccupation with the mental operations of the self and Si, of course, as a measure of social introversion. The positive intercorrelation of these three scales noted above is consistent with this formulation. Thus, the Description group's low scores on these scales might reflect the fact that they experienced less self focused attention than the Mirror or control group.

Sex Differences

Large differences were found between the sexes for several study variables. Table 21 shows that males had significantly higher F scores, Total Negative Affect scores and SRFS Item 1a Anxiety scores than females. Females had higher Si scores than males.

That males had higher F scores and lower Si scores than females is consistent with the findings of Fasching-bauer (1972) and Goldberg (1969) who found similar differences between the sexes on these scales for college aged groups. Why males reported experiencing more negative affect and anxiety while taking the MMPI is less clear. It may be that males actually did experience more negative affect than females or that they were simply less inhibited in reporting it.

It must be remembered when viewing these results that no a priori hypotheses were made concerning sex differences. Given the number of statistical comparisons conducted in this study, the probability that chance alone might have accounted for the sex differences found greatly increases.

It should be remembered also that the Description group included only ten female subjects; this compared to the twelve found in the other two groups. Given that females achieved significantly lower F scores than males, it seems possible that the Description groups mean F-Scale score was an overestimate. Had the number of females been equal among the groups, the F score of the Description group (which was already the lowest of the three groups) may have been even lower, perhaps significantly lower than those of the Mirror and control groups. These results would have then been consistent with the pattern of results

found for the other validity scales. Namely, they would show the Description group to have faked bad less than the Mirror or control groups.

Summary

Response sets have long been recognized as a chief perturbation to self report measure validity. Faking, especially faking good, has been identified as the most troublesome response style of all. Psychometric procedures have been developed to correct for the portion of test variance attributable to faking good response style bias. Few procedures have been developed to reduce a respondent's tendency to fake good.

Recent work by Pryor, Gibbons and Wicklund (1975) and Pfau (1976) has shown that subjects complete self report measures more honestly when they are stimulated to focus attention on themselves. This work was based on Duval and Wicklund's (1972) theory of objective self awareness which posits that when a person is presented with a symbol or reflection of himself (e.g., a mirror), his attention is shifted inward and his self evaluations become more objective.

In the present study, the MMPI was administered to three college aged groups of subjects. In the two experimental conditions subjects completed the test under condi-

tions which were assumed to foster self focused attention. One group completed the test in front of a mirror, the other completed it in front of a handwritten description of their physical characteristics. A control group completed the test under normal conditions. It was hypothesized that the experimental groups would fake good less than the control group. These results were assumed to be reflected in the validity scale scores of the three groups. Experimental groups were expected to achieve higher F-Scale scores, lower K-Scale scores and higher F minus K Index scores than controls. Three corollary hypotheses were also put forth. The first stated that completing the test in an honest and frank manner would take more time than completing it in the usual, faking good, manner. Thus it was expected that the experimental groups would take more time to complete the test than the control group. The second stated that completing the test in an honest and frank manner would cause subjects to confront their faults and weaknesses. Thus it was expected that the experimental group would experience more negative affect while completing the test than the control group. The third stated that the two experimental groups would not differ in terms of their validity scale scores, their time taken to complete the test, or their degree of negative affect.

The results failed to confirm any of the hypotheses. Validity scale scores of the Mirror experimental group and the control group did not differ significantly. The Description experimental group had significantly higher K-Scale scores and significantly lower F minus K Index scores than either the control group or the Mirror experimental group. Thus, in direct contrast to expectation, the Description group actually faked good to a greater extent than the control group. The F Scale scores of the Description and control groups did not differ significantly. No differences were found among the groups on their time taken to complete the MMPI. No differences were found among the groups on the degree of negative affect experienced while taking the MMPI.

In sum, the results failed to support the formulation of objective self awareness theory that self report validity is enhanced by conditions which stimulate self focused attention.

REFERENCES

Allen, R.M. Personality assessment procedures: Psychometric, projective and other approaches. New York: Harper & Row, 1958.

Allport, G.W. Personality: A psychological interpretation. New York: Holt, 1937.

Allport, G.W. The use of personal documents in psychological science. New York: Social Science Research Council Bulletin No. 49, 1942.

Anthoney, N.C. Comparison of clients' standard, exaggerated, and matching MMPI profiles. Journal of Consulting and Clinical Psychology, 1971, 36, 100-103.

Bass, B.M. Authoritarianism or acquiescence? Journal of Abnormal and Social Psychology, 1955, 51, 616-623.

Becker, W.C. The matching of behavior ratings and questionnaire personality factors. Psychological Bulletin, 1960, 57, 201-211.

Berg, I.A. Response set in personality assessment. Chicago: Aldine Publishing Company, 1967.

Bernreuter, R.G. Validity of the personality inventory. Personnel Journal, 1933, 11, 383-386.

Borgatta, E.F. Analysis of social interaction and sociometric perception. Sociometry, 1954, 17, 7-32.

Branca, A.A. and Podolnick, E.E. Normal, hypnotically induced and feigned anxiety as reflected in and detected by the MMPI. Journal of Consulting Psychology, 1961, 25, 165-170.

Cady, V.M. The estimation of juvenile incorrigibility. Journal of Delinquency Monographs, 1923, No. 2.

Campbell, D.T. and Fiske, D.W. Convergent and discriminant validation by the multi-trait multi-method matrix. Psychological Bulletin, 1959, 56, 81-105.

Cattell, R.B. Personality and motivation: Structure and measurement. New York: Harcourt, Brace & Jovanovich, 1957.

Cattell, R.B. Personality and mood by questionnaire. San Francisco: Jossey-Bass, 1973.

Cattell, R.B. and Dreger, R.M. Handbook of modern personality theory. Washington, D.C.: Hemisphere Publishing, 1977.

Chapman, L.J. and Bock, R.D. Components of variance due to acquiescence and content in the F-scale measure of authoritarianism. Psychological Bulletin, 1958, 55, 328-333.

Chapman, L.J. and Campbell, D.T. Response set in the F-scale. Journal of Abnormal and Social Psychology, 1957, 54, 129-132.

Christie, R., Havel, J., and Seidenberg, B. Is the F-scale irreversible? Journal of Abnormal and Social Psychology, 1958, 56, 143-159.

Cofer, C.N., Chance, J.E., and Judson, A.J. A study of malingering on the MMPI. Journal of Psychology, 1949, 27, 491-499.

Cohn, T.S. The relationship of the F scale to a response set to answer positively. American Psychologist, 1953, 8, 335 (Abstract).

Combs, A.W., Soper, D.W. and Courson, C.C. The measurement of self concept and self report. Educational and Psychological Measurement, 1963, 33, 493-500.

Cooke, G. The efficacy of two desensitization procedures: An analogue study. Behavior Research and Therapy, 1966, 4, 17-24.

Cowen, E.L. and Tongas, P. The social desirability of trait descriptive terms: Applications to a self-concept inventory. Journal of Consulting Psychology, 1959, 23, 361-365.

Cronbach, L.J. An experimental comparison of the multiple true-false and multiple multiple-choice tests. Journal of Educational Psychology, 1941, 32, 533-543.

Cronbach, L.J. Studies of acquiescence as a factor in the true-false test. Journal of Educational Psychology, 1942, 33, 401-415.

Cronbach, L.J. Response sets and test validity. Educational and Psychological Measurement, 1946, 6, 475-494.

Dahlstrom, W.G., Welsh, G.S., and Dahlstrom, L.E. An MMPI handbook (volume I). Minneapolis: University of Minnesota Press, 1972.

Damarian, F. and Messick, S.J. Response styles as personality variables: A theoretical integration of multivariate research. Princeton, New Jersey: Educational Testing Service Research Bulletin, 1965, 65-100.

Deutscher, I. Words and deeds: Social sciences and social policy. Social Problems, 1966, 13(3), 235-254.

Dicken, C. Good impression, social desirability and acquiescence as suppressor variables. Educational and Psychological Measurement, 1963, 23, 699-720.

Dittman, A.T. and Llewellyn, L.G. Body movement and speech rhythm in social conversation. Journal of Personality and Social Psychology, 1969, 11, 98-106.

Drasgo, J. and Barnette, W.L. F-K in a motivated group. Journal of Consulting Psychology, 1957, 21, 399-401.

Dunnette, M.D., McCartney, J., Carlson, H.C., and Kirchner, W.K. A study of faking behavior on a forced choice self description checklist. Personnel Psychology, 1962, 15, 13-24.

Duval, S. and Wicklund, R.A. A theory of objective self awareness. New York: Academic Press, 1972.

Duval, S., Wicklund, R.A., and Fine, B. Unpublished manuscript, cited in S. Duval and R.A. Wicklund, A theory of objective self awareness. New York: Academic Press, 1972.

Edwards, A.L. The relationship between the judged desirability of a trait and the probability that the trait will be endorsed. Journal of Applied Psychology, 1953, 37, 90-93.

Edwards, A.L. The social desirability variable in personality assessment and research. New York: Dryden, 1957.

Edwards, A.L. Social desirability and the description of others. Journal of Abnormal and Social Psychology, 1959, 59, 434-436.

Edwards, A.L. The social desirability variable: A review. In I. Berg (Ed.) Response set in personality assessment. Chicago: Aldine, 1965.

Edwards, A.L. and Diers, C.J. Social desirability and the factorial interpretation of the MMPI. Educational and Psychological Measurement, 1962, 22, 501-509.

Ellis, A. The validity of personality questionnaires. Psychological Bulletin, 1946, 43, 385-400.

Exner, J. E., McDowell, E., Pabst, J., Stackman, W., and Kirk, L. On the detection of willful falsification in the MMPI. Journal of Consulting Psychology, 1963, 27, 91-94.

Faschingbauer, T.R. A short written form of the group MMPI. Doctoral Dissertation, University of North Carolina, 1972, (DAI, 1973, 34, 409B).

Fiske, D.W. Measuring the concepts of personality. Chicago: Aldine, 1971.

Freeman, L.C. and Ataov, T. Invalidity of indirect and direct measures of attitudes toward cheating. Journal of Personality, 1960, 28, 443-447.

Goldberg, L.R. Student personality characteristics and optimal college learning conditions. Oregon Research Institute Monographs, 1969, 9, No. 1.

Gough, H.G. Simulated patterns on the MMPI. Journal of Abnormal and Social Psychology, 1947, 42, 215-225.

Gough, H.G. The F minus K dissimulation index for the MMPI. Journal of Consulting Psychology, 1950, 14, 408-413.

Gough, H.G. Some common misconceptions about neuroticism. Journal of Consulting Psychology, 1954, 18, 287-292.

Hanley, C. Social desirability and responses to items from three MMPI scales: D, Sc, and K. Journal of Applied Psychology, 1956, 40, 324-328.

Hassinger, E. and McNamara, R.L. Stated opinion and actual practice in health behavior in a rural area. The Midwest Sociologist, 1957, May, 93-97.

Hartshorne, H. and May, M.A. Studies in deceit. New York: Macmillan, 1928.

Hathaway, S.R. and McKinley, J.C. Minnesota Multiphasic Personality Inventory. Minneapolis: University of Minnesota Press, 1943.

Hathaway, S.R. and Meehl, P.E. An atlas for the clinical use of the MMPI. Minneapolis: University of Minnesota Press, 1951.

Hathaway, S.R. and Monachesi, E.D. An atlas of juvenile MMPI profiles. Minneapolis: University of Minnesota Press, 1961.

Henry, J. Spontaneity, initiative, and creativity in suburban classrooms. American Journal of Ortho-psychiatry, 1959, 29, 266-279.

Hunt, H.F. The effect of deliberate deception on MMPI performance. Journal of Consulting Psychology, 1948, 12, 396-402.

Hunt, H.F., Carp, A., Cass, W.A., Winder, C.L., and Kantor, R.E. A study of the differential diagnostic efficiency of the MMPI. Journal of Consulting Psychology, 1948, 12, 331-336.

Ickes, W.J., Wicklund, R.A., and Ferris, C.B. Objective self awareness and self esteem. Journal of Experimental Social Psychology, 1973, 9, 202-219.

Jackson, D.N. and Messick, S.J. Response styles on the MMPI: Comparison of clinical and normal samples. Journal of Abnormal and Social Psychology, 1962, 65, 285-299.

Jackson, D.N., Messick, S.J., and Solley, C.M. How "rigid" is the "authoritarian"? Journal of Abnormal and Social Psychology, 1957, 54, 137-140.

Katkin, E.S. The relationship between manifest anxiety and two indices of autonomic response to stress. Journal of Personality and Social Psychology, 1965, 2, 324-333.

Kelly, E.L., Miles, C.C., and Terman, L.C. Ability to influence one's score on a typical pencil and paper test of personality. Journal of Personality, 1936, 4, 206-215.

Kenny, D.T. The influence of social desirability on discrepancy measures between real self and ideal self. Journal of Consulting Psychology, 1956, 20, 315-318.

Kutner, B.C., Wilkins, C., and Yarrow, P.R. Verbal attitudes and overt behavior involving racial prejudice. Journal of Abnormal and Social Psychology, 1952, 47, 649-652.

Lacey, J.I. Somatic response patterning and stress: Some revisions of activation theory. In M.H. Appley and R. Trumbill (Eds.), Psychological Stress. Appleton-Century-Crofts, 1967.

LaPiere, R.T. Attitudes vs. actions. Social Forces, 1934, 13, 230-237.

Leavitt, H.J., Hax, H., and Roche, J.H. "Authoritarianism" and agreement with things authoritative. Journal of Psychology, 1955, 40, 215-221.

Lichtenstein, E. and Bryan, J.H. Acquiescence and the MMPI: An item reversal approach. Journal of Abnormal Psychology, 1965, 70, 290-293.

Liebling, B.A., Seiler, M., and Shaver, P. Self awareness and cigarette-smoking behavior. Journal of Experimental Social Psychology, 1974, 10, 325-332.

Liebowitz, G. Comparison of self report and behavioral techniques of assessing aggression. Journal of Consulting and Clinical Psychology, 1968, 32, 21-25.

Lohman, J.P. and Reitze, D.C. Note on race relations in a mass society. American Journal of Sociology, 1952, 58, 240-246.

Longstaff, H.P. Fakeability of the Strong Interest Blank and the Kuder Preference Record. Journal of Applied Psychology, 1948, 32, 360-369.

Marks, P.A., and Seeman, W. The actuarial description of personality: an atlas for use with the MMPI. Baltimore: Williams and Wilkens, 1963.

Martin, B. The assessment of anxiety by physiological behavioral measures. Psychological Bulletin, 1961, 58, 234-255.

Meehl, P.E. and Hathaway, S.R. The K factor as a suppressor variable in the MMPI. Journal of Applied Psychology, 1946, 30, 525-564.

Meridith, G.M. Stereotypic desirability profiles for the 16PF questionnaire. Psychological Reports, 1968, 23, 1173-1174.

Merrill, R.M. and Heathers, L.B. The relation of the MMPI to the EPPS on a college counseling center sample. Journal of Consulting Psychology, 1956, 20, 310-314.

Messick, S.J. and Jackson, D.N. Authoritarianism or acquiescence in Bass's data. Journal of Abnormal and Social Psychology, 1957, 54, 424-426.

Messick, S.J. and Jackson, D.N. The measurement of authoritarian attitudes. Educational and Psychological Measurement, 1958, 18, 241-253.

Messick, S.J. and Jackson, D.N. Acquiescence and the factorial interpretation of the MMPI. Psychological Bulletin, 1961, 58, 299-304.

Minard, R.D. Race relationships in the Pochahontas coal field. Journal of Social Issues, 1952, 8, 29-44.

Mischel, W. Personality and Assessment, New York: Wiley, 1968, 1-103.

Nunnally, J.C. Tests and measurement, assessment and prediction. New York: McGraw Hill, 1959.

Nunnally, J.C. Popular conceptions of mental health: Their development and change. New York: Holt, 1961.

Osborne, D.A. A moderator variable approach to MMPI validity. Journal of Clinical Psychology, 1970, 26, 486-490.

Osgood, C.E. Studies on the generality of affective meaning systems. American Psychologist, 1962, 17, 10-28.

Osgood, C.E., Suci, G.J., and Tannenbaum, P.H. The measurement of meaning. Urbana, Illinois: University of Illinois Press, 1957.

Parker, J. The relationship of self report to inferred self concept. Educational and Psychological Measurement, 1966, 26, 691-700.

Pfau, B.N. The effects of self focused attention of the MMPI validity scales, the F minus K index and the D scale. Unpublished manuscript, Loyola University of Chicago, 1976.

Pryor, J.B., Gibbons, F.X. and Wicklund, R.A. Untitled manuscript reported in Wicklund, R.A. Objective self awareness. In L. Berkowitz (Ed.,) Advances in experimental social psychology, V.8, p. 257. New York: Academic Press, 1975.

Raphelson, A.C. The relationship among imaginative, direct verbal, and physiological measures of anxiety in an achievement situation. Journal of Abnormal and Social Psychology, 1957, 54, 13-18.

Rorer, L.G. and Goldberg, L.R. Acquiescence on the MMPI?, Educational and Psychological Measurement, 1965, 25, 801-817. (a)

Rorer, L.G. and Goldberg, L.R. Acquiescence and the vanishing variance component. Journal of Applied Psychology, 1965, 49, 422-430. (b)

Rosenstein, A.J. Psychometric versus physiological anxiety and serial learning. Journal of Personality, 1960, 28, 279-292.

Rosensweig, S. A suggestion for making verbal personality tests more valid. Psychological Review, 1934, 41, 400-401.

Rosensweig, S. A basis for the improvement of personality tests with special reference to the M-F battery. Journal of Abnormal and Social Psychology, 1938, 33, 476-488.

Ruch, F.L. A technique for detecting attempts to fake performance on a self inventory type of personality test. In Q. McNemar and M.A.Merrill (Eds.) Studies in personality, New York: McGraw-Hill, 1942.

Scheier, I.H. and Cattell, R.B. Confirmation of objective test factors and assessment of their relation to questionnaire factors: A factor analysis of 113 rating, questionnaire and objective test measurements of personality. Journal of Mental Science, 1958, 104, 608-624.

Schletzer, V.M. Attitudinal barriers to employment. Minnesota Studies in Vocational Rehabilitation: XI, Industrial Relations Center, Bulletin 32, University of Minnesota, Minneapolis, 1961.

Silver, R.J. and Sines, L.K. Diagnostic efficiency of the MMPI with and without the K correction, Journal of Clinical Psychology, 1962, 18, 312-314.

Strong, E.K. Vocational interests of men and women. Stanford: Stanford University Press, 1943.

Taylor, J.B. Social desirability and MMPI performance: The individual case. Journal of Consulting Psychology, 1959, 23, 514-517.

Tamken, A.S. and Schere, I.W. What is measured by the "Cannot Say" scale of the group MMPI? Journal of Consulting Psychology, 1957, 21, 370-371.

Tedeschi, J.T. and Lindskold, S. Social psychology: Interdependence, interaction and influence. New York: John Wiley and Sons, 1976, pp. 208-209.

Vernon, P.E. Personality assessment: A critical survey. London: Methuen, 1964.

Warriner, C.K. The nature and functions of official morality. American Journal of Sociology, 1958, 64, 165-168.

Weiner, D.N. Subtle and obvious keys for the MMPI. Journal of Consulting Psychology, 1948, 12, 164-170.

Welsh, G.S. and Dahlstrom. Basic readings on the MMPI in psychology and medicine. Minneapolis: University of Minneapolis Press, 1956.

Wessman, A.G. Faking personality test scores in a simulated employment situation. Journal of Applied Psychology, 1952, 36, 112-113.

Wicker, A.W. Attitudes versus actions: the relationship of verbal and overt behavioral responses to attitude objects. Journal of Social Issues, 1969, 25, 41-78.

Wicklund, R.A. Objective self awareness. In Berkowitz, L. (Ed.) Advances in Experimental Social Psychology, vol. 8, 233-275, New York: Academic Press, 1975.

Zuckerman, M., Norton, J. and Sprague, D.S. Acquiescence and extreme sets and their role in tests of authoritarianism and parental attitude. Psychiatric Research Reports, 1958, 10, 28-45.

Zunich, M. Relationship between maternal behavior and attitudes toward children. Journal of Genetic Psychology, 1962, 155-165.

APPENDIX A

SELF REPORT FOLLOW-UP SCHEDULE (SRFS)

PRINTED BELOW ARE A NUMBER OF QUESTIONS AND INCOMPLETE STATEMENTS. UNDER EACH OF THESE IS ONE OR MORE SCALES WITH WORDS AT EITHER END. FOR EACH SCALE CHECK THE SPACE THAT BEST EXPRESSES YOUR RESPONSE TO THE QUESTION OR INCOMPLETE STATEMENT. FOR EXAMPLE, ON THE FIRST QUESTION, IF YOU FELT "VERY CALM", YOU WOULD CHECK THE EXTREME LEFT HAND SPACE OR (1). IF YOU FELT "VERY ANXIOUS", YOU WOULD CHECK THE EXTREME RIGHT HAND SPACE OR (7). IF YOU FELT NEITHER CALM NOR ANXIOUS YOU WOULD CHECK THE MIDDLE SPACE OR (4). REMEMBER THE SCALES REPRESENT A CONTINUUM OF FEELINGS; YOU MAY CHECK ANY OF THE SEVEN SPACES.

1. HOW DID YOU FEEL WHILE TAKING THE TEST?

CALM ___/ ___/ ___/ ___/ ___/ ___/ ___/ ANXIOUS
1 2 3 4 5 6 7

HAPPY ___/ ___/ ___/ ___/ ___/ ___/ ___/ UNHAPPY
1 2 3 4 5 6 7

2. THE ROOM WHERE YOU TOOK THE TEST WAS...

PLEASANT ___/ ___/ ___/ ___/ ___/ ___/ ___/ UNPLEASANT
1 2 3 4 5 6 7

3. ANSWERING THE TEST QUESTIONS WAS...

EASY ___/ ___/ ___/ ___/ ___/ ___/ ___/ DIFFICULT
1 2 3 4 5 6 7

4. HOW FREQUENTLY DID YOU NOTICE THE MIRROR/PHYSICAL DESCRIPTION IN FRONT OF YOU?

FREQUENTLY ___/ ___/ ___/ ___/ ___/ ___/ ___/ INFREQUENTLY
1 2 3 4 5 6 7

5. HOW DID YOU REACT TO THE PRESENCE OF THE MIRROR/ PHYSICAL DESCRIPTION?

STRONGLY ___/ ___/ ___/ ___/ ___/ ___/ ___/ HARDLY AT ALL
1 2 3 4 5 6 7

APPENDIX B

HEIGHT:

WEIGHT:

EYES:

HAIR:

AGE:

SEX:

RACE:

PHYSICAL DESCRIPTION SHEET

APPENDIX C

DEBRIEFING SHEET

The test you just completed was the Minnesota Multiphasic Personality Inventory, known to psychologists everywhere as the MMPI. The MMPI yields a personality profile on ten dimensions: Hypochondriasis, Depression, Hysteria, Psychopathy, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania and Social Introversion. Also included in the test are four "validity scales". These scales measure the extent to which a person lies or stretches the truth. They may indicate that a person is "faking good", trying to look healthier than he actually is, or, they may indicate that a person is "faking bad", trying to look more disturbed than he actually is. College students generally fake good to some degree.

This experiment is examining the effects of self focused attention on the MMPI validity scales. By self focused attention I mean a sense of self consciousness. I have promoted this sense of self consciousness by placing some subjects in front of mirrors or written descriptions of their physical attributes. If you were not seated in front of a mirror or a description you were a control subject. According to a social psychologist named Wicklund, self consciousness promotes a state of heightened objectivity concerning the self. My hypothesis is simply that the people who were stimulated to become self conscious will be more objective while filling out the MMPI and will fake good less.

Please rest assured that all the test data is completely confidential and anonymous. Your forms have been identified by numbers and not names for this purpose. They have been identified by numbers to make collation of the data more systematic. THIS IS A STUDY OF GROUP DIFFERENCES AND SO I WILL NOT EXAMINE AND AM NOT CONCERNED WITH ANY SUBJECT'S INDIVIDUAL TEST PROFILE OR PERSONALITY.

If you have any questions about the experiment, please do not hesitate to call me at 338-5958. I will be pleased to answer any theoretical question I am able to about the experiment or the MMPI. I CANNOT AND WILL NOT DISCUSS ANYONE'S MMPI PROFILE WITH THEM OR ANYONE ELSE, HOWEVER. If you wish to know the results of this study please call me in January.

Thank you very much for your help. I really appreciate it.

Sincerely,

Bruce Pfau

APPENDIX D

Pfau's (1976) Data: Means, Standard Deviations and t-Test Results of K-Scale, F-Scale and F-K Index Scores for Experimental and Control Groups

Scale		Mirror	Control	t
K	Mean	50.20	55.13	2.01*
	S.D.	6.79	6.63	
F	Mean	56.40	51.40	2.18*
	S.D.	5.97	6.59	
F-K	Mean	-6.87	-11.53	2.67**
	S.D.	2.09	2.28	

* $p < .05$

** $p < .01$

APPENDIX E

K-Scale, F-Scale and F minus K Index Scores for Mirror and Control Groups: Pfau's (1976) Sample and the Present Sample Combined (N=70)

Scale		Mirror	Control	df	t	p
K	Mean	50.09	52.69	68	1.19	NS
	S.D.	5.76	7.50			
F	Mean	55.80	53.77	68	1.30	NS
	S.D.	5.56	7.40			
F-K	Mean	-7.00	-9.17	68	1.15	NS
	S.D.	3.11	5.90			

APPROVAL SHEET

The thesis submitted by Bruce Pfau has been read and approved by the following committee:

Dr. Frank J. Kobler
Professor, Psychology, Loyola

Dr. Alan S. DeWolfe
Professor, Psychology, Loyola

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

April 24, 1978
Date

Frank J. Kobler
Director's Signature